

**Remarks**

Claims 1-3 and 5-14 are pending herein. By this Amendment, claim 4 has been cancelled, claims 1 and 5-7 modified, and new claims 13 and 14 added. Specifically, claim 1 has been amended to include the contents of cancelled claim 4, and claims 5-7 have been amended to depend upon claim 1 rather than cancelled claim 4. New claims 13 and 14 recite that in the pigmentation step presented in claims 8 and 9, respectively, the solution is stirred at a temperature of from 50°C to 100°C for 5 to 60 hours. Support for this recitation can be found, e.g., in Preparation Example 1, set forth at pages 45-46 of the instant specification.

In the Office Action, claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,528,645 to Hamasaki et al. ("Hamasaki").

In view of the amendments and remarks herein, Applicants respectfully request reconsideration and withdrawal of the rejection set forth in the Office Action.

**I. Rejection**

Hamasaki is cited for teaching compounds, compositions and methods that are said to be of the same nature as titanyl phthalocyanine crystals, with the production methods thereof, as set forth in the claims. The Examiner notes that there are differences in format between the teachings in Hamasaki and the presently claimed invention but states that these differences "are insignificant and inherently similar to the current application."

**(a) Claims 1-7**

According to the Examiner, instant claims 1-7 are a combination of claims 1-10 in Hamasaki.

By this Amendment, claim 1 has been amended to include the contents of cancelled claim 4. Thus, amended claim 1 is now directed to a titanyl phthalocyanine crystal formed by crystallizing a titanyl phthalocyanine compound, characterized in that the crystal has a maximum peak at a Bragg angle  $2\theta \pm 0.2^\circ = 27.2^\circ$ , has no peak at  $7.4^\circ$  in a  $\text{CuK}\alpha$  characteristic X-ray diffraction spectrum, and the crystal does not have a peak of a change in temperature within a range from 50 to 400°C except for a peak associated with evaporation of adsorbed water in

differential scanning calorimetry, and the crystal recovered after dipping in an organic solvent for 7 days has a maximum peak at a Bragg angle  $2\theta \pm 0.2^\circ = 27.2^\circ$  and has no peak at  $7.4^\circ$  in a  $\text{CuK}\alpha$  characteristic X-ray diffraction spectrum. Claims 2, 3 and 5-7 depend upon amended claim 1.

Hamasaki does not teach or suggest a titanyl phthalocyanine crystal which, after being dipped in an organic solvent for **7 days**, has a maximum peak at a Bragg angle  $2\theta \pm 0.2^\circ = 27.2^\circ$  and has no peak at  $7.4^\circ$  in a  $\text{CuK}\alpha$  characteristic X-ray diffraction spectrum.

The titanyl phthalocyanine crystal prepared in Preparation Example 1 of the instant specification (pages 44-46) represents a titanyl phthalocyanine crystal within the scope of amended claim 1. Preparation Example 3 in the present specification (pages 47-48) corresponds to Preparation Example 1 set forth in Hamasaki (cols. 20-21). Therefore, the titanyl phthalocyanine crystal formed in Preparation Example 3 is a titanyl phthalocyanine crystal within the scope of Hamasaki's invention and outside the scope of Applicants' claim 1.

Applicants' claimed titanyl phthalocyanine crystal is an improvement over the titanyl phthalocyanine crystal of Hamasaki's invention. For example, according to the present specification:

It has been confirmed that, even if the titanyl phthalocyanine crystal of Preparation Example 1 is dipped in tetrahydrofuran for 7 days, no peak appears at a Bragg angle  $2\theta \pm 0.2^\circ = 7.4^\circ$  and  $26.2^\circ\text{C}$  as shown in FIG. 4 and, therefore, ***the crystal retains the same crystal form as that before dipping.*** (page 50, lines 4-8) [emphasis added]

[I]t has been confirmed that, when the titanyl phthalocyanine crystal of Preparation Example 3 is dipped in tetrahydrofuran for 7 days, a peak at a Bragg angle  $2\theta \pm 0.2^\circ = 27.2^\circ$  decreases and a peak at  $7.4^\circ$  increases as shown in FIG. 10 and, therefore, ***the crystal is transferred to the other crystal forms.*** (page 51, lines 16-21) [emphasis added]

Thus, the titanyl phthalocyanine crystal set forth in amended claim 1 has significantly improved storage stability compared to the titanyl phthalocyanine crystal taught in Hamasaki and, therefore, is a different compound from Hamasaki's titanyl phthalocyanine

crystal. In other words, Hamasaki does not inherently teach Applicants' claimed crystal. Therefore, for at least this reason, Hamasaki would not have rendered the crystal set forth in the instant claims, and does not teach or suggest the titanyl phthalocyanine of amended claim 1. Therefore, Hamasaki does not render instant claims 1-3 and 5-7 obvious.

**(b) Claims 8 and 9**

The Examiner states that instant claims 8 and 9 are a combination of claims 8-14 in Hamasaki. Claims 8 and 9 are said to recite the same steps recited in Hamasaki's claims 8-14, with insignificant differences. According to the Examiner, the differences found in instant claims 8 and 9 are within the pigmentation step where the solution is stirred at 30° to 100°C for 5 to 60 hours. The Examiner asserts that these limitations are inherent in Hamasaki because "though the temperature is not mentioned in the patent pigmentation step, the temperature is presumed to be within a range of room temperatures." According to the Examiner, the temperature range of 30°C to 100°C overlaps the room temperature range and, therefore, anticipates claims 8 and 9. Hamasaki is also said to anticipate the step of stirring the solution for 5 to 60 hours in claims 8 and 9 in that Hamasaki recites in claims 7, 8 and 11-14 that during the pigmentation step, the solution should be stirred under heating for a fixed time. According to the Examiner, the time period of 5 to 60 hours is a fixed time and, therefore, is anticipated.

For the reasons given above, Hamasaki does not teach or suggest the titanyl phthalocyanine recited in amended claim 1. Therefore, Applicants submit that Hamasaki does not teach or suggest a method for producing the titanyl phthalocyanine recited in amended claim 1.

Furthermore, Hamasaki does not teach a pigmentation step involving stirring the solution of low crystalline titanyl phthalocyanine for 5 to 60 hours. In the Office Action, as noted above, Hamasaki is said to anticipate the step of stirring the solution for 5 to 60 hours in instant claims 8 and 9 in that Hamasaki recites in claims 7, 8 and 11-14 that during the pigmentation step, the solution should be stirred under heating for a "fixed time". According to the Office Action, the time period of 5 to 60 hours is a "fixed time" and, therefore, is anticipated. Hamasaki does not define the term "fixed period". The only specific "fixed time" identified in Hamasaki relative to

the pigmentation step is one hour (see col. 21, lines 9 and 51). Hamasaki does not teach or suggest a time period of 5 hours or more for the pigmentation step. In the present specification, Preparation Example 1 used a time period of 5 hours in the pigmentation step, while Preparation Example 3 used a time period of 1 hour in the pigmentation step. The superior storage stability of the titanyl phthalocyanine prepared in Preparation Example 1 compared to the storage stability of the titanyl phthalocyanine prepared in Preparation Example 3 shows that the time period involved in the pigmentation step has a role in the stability of the titanyl phthalocyanine product. Such role is not taught or suggested in Hamasaki and is unexpected in view of Hamasaki, which does not address stability after seven days.

Thus, for at least the foregoing reasons, Applicants submit that claims 8, 9, 13 and 14 would not have been obvious over Hamasaki.

Applicants submit that new claims 13 and 14 also are patentable over Hamasaki for the additional reason that Hamasaki does not teach a pigmentation step involving stirring the solution of low crystalline titanyl phthalocyanine at 50 to 100°C. According to the Office Action, the differences found in instant claims 8 and 9 are within the pigmentation step where the solution is stirred at 30° to 100°C for 5 to 60 hours. The Office Action states that these limitations are inherent in Hamasaki because “though the temperature is not mentioned in the patent pigmentation step, the temperature is presumed to be within a range of room temperatures.”

The temperature range of 50°C to 100°C recited in new claims 13 and 14 does not overlap room temperature. Therefore, for at least this additional reason, Applicants submit that Hamasaki would not have rendered new claims 13 and 14 obvious.

**(c) Claims 10-12**

According to the Office Action, Hamasaki teaches all of the limitations set forth in instant claims 10-12. The electrophotosensitive material in a single or multilayer form as recited in claims 10-12 is said to be disclosed in Hamasaki with insignificant differences. Reference is made to Hamasaki at col. 10, lines 3-41 and col. 11, lines 1-52.

Applicants submit that because Hamasaki does not teach or suggest the titanyl phthalocyanine recited in amended claim 1, the reference does not teach or suggest an electrophotosensitive material using the titanyl phthalocyanine recited in amended claim 1.

Furthermore, the Examples and Comparative Examples set forth in the present specification show that an electrophotosensitive material using a titanyl phthalocyanine crystal within the scope of amended claim 1 (see Preparation Example 1) is superior to an electrophotosensitive material using a titanyl phthalocyanine crystal within the scope of Hamasaki (see Preparation Example 3). For example, the specification teaches the following:

Regarding the electrophotosensitive materials of Comparative Examples 8 to 14 using the titanyl phthalocyanine crystals of Preparation Example 3, the *potential after exposure*  $V_{r2}$  (V) of the photosensitive material wherein the single-layer type photosensitive layer was formed *using the coating solution stored for 7 days after preparation was drastically increased as compared with the potential after exposure*  $V_{r1}$  (V) *of the photosensitive material wherein the single-layer type photosensitive layer was formed using the coating solution immediately after preparation*, although the degree of increase was lower than that of Preparation Example 2. (page 57, lines 12-22) [emphasis added]

On the other hand, regarding the photosensitive materials Examples 1 to 36 using the titanyl phthalocyanine crystal of Preparation Example 1 of the present invention, the *potential after exposure*  $V_{r1}$  (V) *and the potential after exposure*  $V_{r2}$  (V) *were scarcely changed*. This fact showed that the photosensitive material having *good sensitivity characteristics, that are always stable regardless of the lapsed time after preparing the coating solution, by using the titanyl phthalocyanine crystal of Preparation Example 1*. (page 57, line 23 – page 58, line 6) [emphasis added]

Furthermore, as indicated in Table 7 set forth on page 59 of the present specification, an electrophotosensitive material using the titanyl phthalocyanine crystal of Preparation Example 1 had significantly better repeating stability than did an electrophotosensitive material using the titanyl phthalocyanine crystal of Preparation Example 3.

Thus, the use of a titanyl phthalocyanine crystal within the scope of amended claim 1 resulted in an electrophotosensitive material having improved stability and sensitivity characteristics as compared to the electrophotosensitive material using Hamasaki's titanyl phthalocyanine crystal. More particularly, the use of Applicants' claimed titanyl phthalocyanine crystal resulted in a different electrophotosensitive material than the electrophotosensitive material using Hamasaki's crystal, an electrophotosensitive material which is not taught or suggested in Hamasaki and which is not inherent in Hamasaki's teachings.

Therefore, for at least the foregoing reasons, Applicants submit that claims 10-12 would not have been obvious over Hamasaki.


## **II. Conclusion**

In view of the amendments and remarks herein, Applicants respectfully request that the rejection set forth in the Office Action be withdrawn and that claims 1-3 and 5-14 be allowed.

If any fees under 37 C. F. R. §§ 1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300, Order No. 032739.086.

Respectfully submitted,  
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